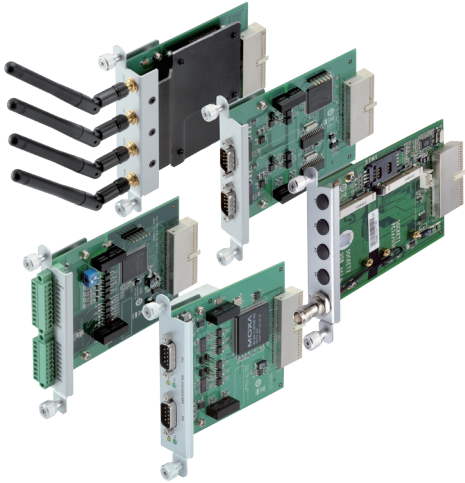


V2400 Series Expansion Modules

Expansion peripheral modules (EPM) for the V2400 series



- > EPM-3032: 2 isolated RS-232/422/485 ports with DB9 connectors
- > EPM-3112: 2 isolated CAN ports with DB9 connectors
- > EPM-3438: 8+8 DI/DO with 3 kV digital isolation protection, 2 kHz counter
- > EPM-DK02*: 2 mini PCIe slots
- > EPM-DK03*: GPS receiver, 2 mini PCIe slots

*Operating Temperature:
w/o wireless module: EN 50155 Class TX
w/ wireless module: EN 50155 Class T1



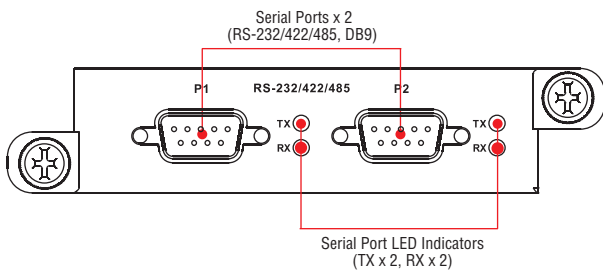
Introduction

Moxa's V2400 series expansion modules, which come with serial ports, CAN ports, wireless and GPS cards, digital input/output channel cards, mini PCI and PCIe modules, a 2-slot mini-PCIe module, and

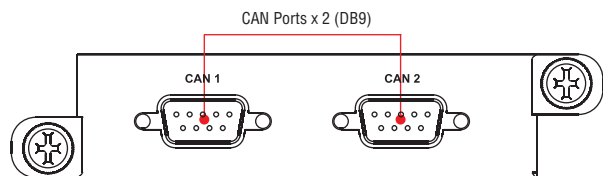
VGA or DVI-I display connectors, can be used with Moxa's V2426 embedded computers, and give end-users the best flexibility for setting up and expanding a variety of industrial applications.

Appearance

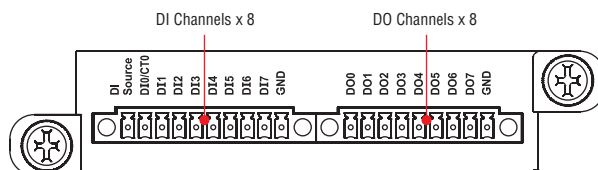
EPM-3032



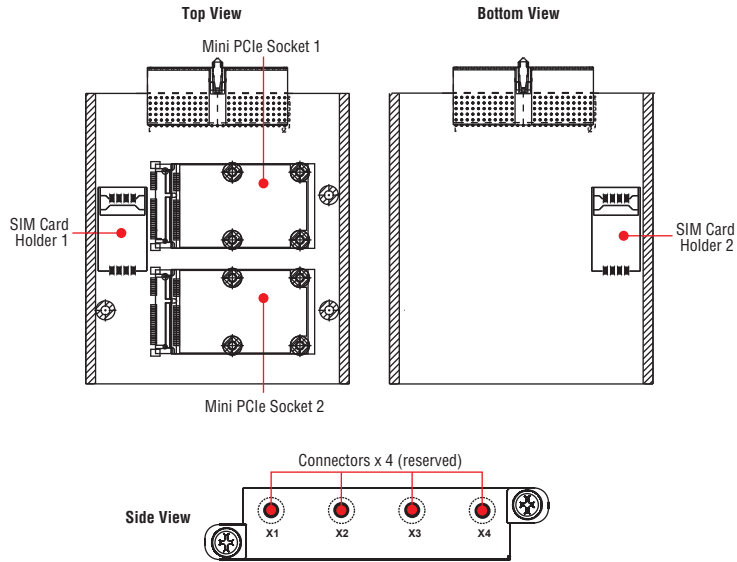
EPM-3112



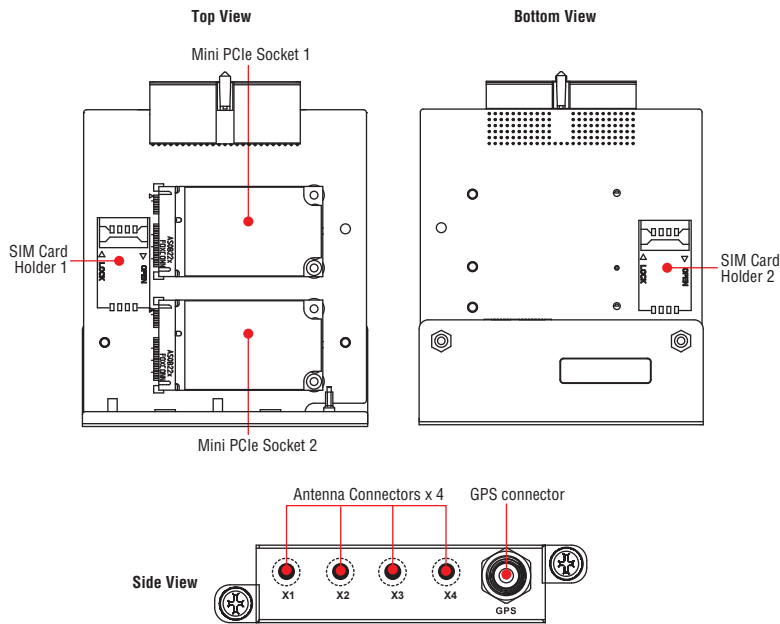
EPM-3438



EPM-DK02



EPM-DK03



EPM-3032 Specifications

Serial Interface

Serial Standards: 2 RS-232/422/485 ports, software-selectable (DB9 male)

Isolation: 2 kV digital isolation

Serial Communication Parameters

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 1.5, 2

Parity: None, Even, Odd, Space, Mark

Flow Control: RTS/CTS, XON/XOFF, ADDC® (automatic data direction control) for RS-485

Baudrate: 50 bps to 921.6 kbps (non-standard baudrates supported; see user's manual for details)

Serial Signals

RS-232: TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND

RS-422: TxD+, TxD-, RxD+, RxD-, GND

RS-485-4w: TxD+, TxD-, RxD+, RxD-, GND

RS-485-2w: Data+, Data-, GND

Physical Characteristics

Weight: 137 g (0.30 lb)

Dimensions: 104 x 121 x 34 mm (4.09 x 4.76 x 1.34 in)

Environmental Limits

Operating Temperature: -40 to 70°C (-40 to 158°F), EN 50155 Class TX

• EPM-3112 Specifications

CANbus Communication

Interface: 2 optically isolated CAN2.0A/2.0B compliant ports

CAN Controller: Phillips SJA1000T

Signals: CAN_H, CAN_L

Isolation: 2 kV digital isolation

Speed: 1 Mbps

Connector Type: DB9 male

Physical Characteristics

Weight: 127 g (0.28 lb)

Dimensions: 104 x 121 x 34 mm (4.09 x 4.76 x 1.34 in)

Environmental Limits

Operating Temperature: -25 to 55°C (-13 to 131°F), EN 50155 Class T1

• EPM-3438 Specifications

Digital Input

Input Channels: 8

Input Voltage: 0 to 30 VDC at 25 Hz

Digital Input Levels for Dry Contacts:

- Logic level 0: Close to GND
- Logic level 1: Open

Digital Input Levels for Wet Contacts:

- Logic level 0: +3 V max.
- Logic level 1: +10 V to +30 V (Source to DI)

Counter Frequency: 2 kHz (DI0 only)

Connector Type: 10-pin screw terminal block (8 DI points, DI Source, GND)

Isolation: 3 kV optical isolation

Digital Output

Output Channels: 8, sink type, 0 to 30 VDC

Output Current: Max. 200 mA per channel

On-state Voltage: 24 VDC nominal, open collector to 30 VDC

Connector Type: 9-pin screw terminal block (8 DO points, GND)

Isolation: 3 kV optical isolation

Physical Characteristics

Weight: 120 g (0.27 lb)

Dimensions: 104 x 121 x 34 mm (4.09 x 4.76 x 1.34 in)

Environmental Limits

Operating Temperature: -40 to 70°C (-40 to 158°F), EN 50155 Class TX

• EPM-DK02 Specifications

PCI Express Mini Slot

Interface:

- Slot 1: PCI-Express V1.0 (one lane) / USB 2.0
- Slot 2: USB 2.0

USB 2.0 Bus SIM Card Holder: Reserved for cellular applications

Physical Characteristics

Weight: 125 g (0.28 g)

Environmental Limits

Operating Temperature: -40 to 70°C (-40 to 158°F), EN 50155 Class TX

• EPM-DK03 Specifications

PCI Express Mini Slot

Interface:

- Slot 1: PCI-Express V1.0 (one lane) / USB 2.0
- Slot 2: USB 2.0

USB 2.0 Bus SIM Card Holder: Reserved for cellular applications

Physical Characteristics

Weight: 220 g (0.49 lb)

Dimensions: 104 x 121 x 34 mm (4.09 x 4.76 x 1.34 in)

Environmental Limits

Operating Temperature:

w/o wireless module: -40 to 70°C (-40 to 158°F), EN 50155 Class TX

w/ wireless module: -25 to 55°C (-13 to 131°F), EN 50155 Class T1

GPS Interface

Receiver Types:

- 50-channel u-blox 6 LEA-6 receiver
- GPS L1 C/A code
- GALILEO L1 open service (with upgrade)
- SBAS: WAAS, EGNOS, MSAS, GAGAN

Acquisition:

- Cold starts: 28 s
- Warm starts: 28 s
- Aided starts: 1 s
- Hot starts: 1 s

Sensitivity:

- Tracking: -160 dBm
- Reacquisition: -160 dBm
- Cold starts: -147 dBm

Timing accuracy:

- RMS: 30 ns
- 99%: <60 ns
- Granularity: 21 ns

Accuracy:

- Position: 2.5 m CEP
- SBAS: 2.0 m CEP

Protocols: NMEA, UBX binary, max. update rate: 5 Hz (ROM version)

Time Pulse: 0.25 Hz to 1 kHz

Velocity Accuracy: 0.1 m/s

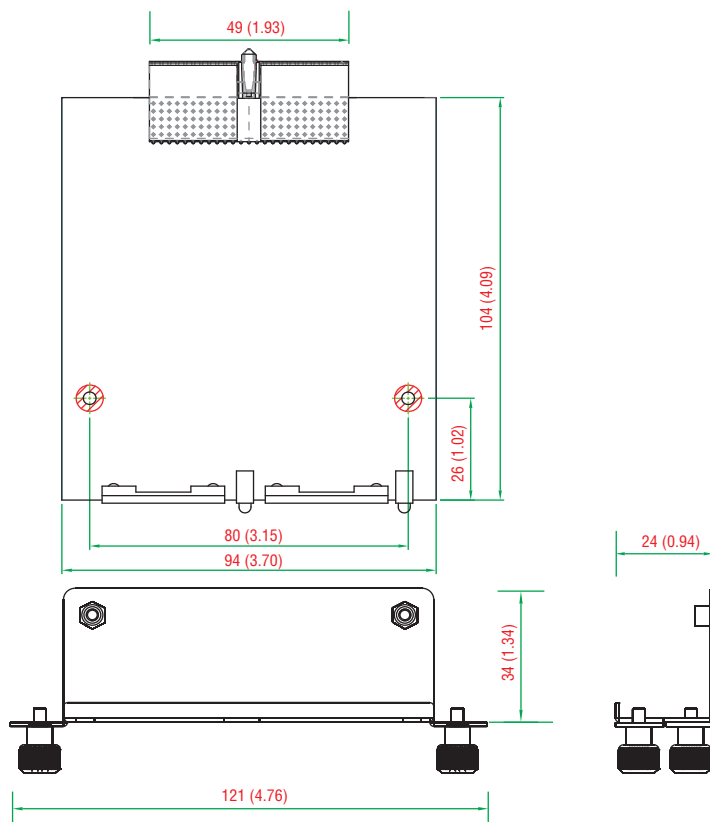
Heading Accuracy: 0.5 degrees

A-GPS: Supports AssistNow Online and AssistNow Offline, OMA SUPL compliant

Operational Limits: Velocity: 500 m/s (972 knots)

Dimensions

Unit: mm (inch)



Ordering Information

Available Models

EPM-DK02: 2 mini PCIe slots, -25 to 55°C operating temperature

EPM-DK03: GPS receiver, 2 mini PCIe slots, -25 to 55°C operating temperature

EPM-3032: 2 isolated RS-232/422/485 ports with DB9 connectors, -40 to 70°C operating temperature

EPM-3112: 2 isolated CAN ports with DB9 connectors, -25 to 55°C operating temperature

EPM-3438: 8+8 DI/DO with 3 kV digital isolation protection, 2 kHz counter, -40 to 70°C operating temperature